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Metal Industry Indicators

Composite Indexes of Leading and Coincident Indicators of Selected Metal Industries for November and December—Summary Report

January 18, 2013

The **primary metals leading index** decreased 0.6% in December to 158.6 from a revised 159.5 in November. Its 6-month smoothed growth rate decreased to -1.5% from an upwardly revised -0.6% in November. The 6-month smoothed growth rate is a compound annual rate that measures the near-term trend. Usually a growth rate above +1.0% signals an increase in metals activity, and a growth rate below -1.0% indicates a downturn in activity. The primary metals leading index growth rate indicates that the decline in U.S. metals industry activity growth is likely to continue in the near future. Slower global economic growth is reducing U.S. metals demand.

Only one of the four indicators that were available for the December index calculation decreased, but its decline outweighed gains in the other three indicators. A nearly 1-hour shorter average workweek in primary metals establishments contributed -2.0 percentage points to the net decline in the leading index. In contrast, a jump in the USGS metals price index growth made the largest positive contribution, 0.6 percentage points to the leading index. The rising stock price index combining construction and farm machinery companies and industrial machinery companies contributed 0.5 percentage points. In December, the PMI moved above the threshold that denotes an increase in future manufacturing activity. It contributed 0.3 percentage points. The December leading index should be considered preliminary because only four of its eight indicators were available, and the leading index will likely be revised when the other components are added next month.

Metals are key inputs in durable goods manufacturing and construction, which account for almost a quarter of gross domestic product final sales. Therefore, the primary metals leading index also gives early signals of major changes in activity for the overall U.S. economy (Chart 8).

The steel leading index was unchanged from October to November, the latest month for which it is available. Movement among its nine indicators varied. The highest car and light truck sales in 5 years boosted the leading index the most in November. In contrast, declines in the steel scrap growth rate and the PMI made large negative contributions. The steel leading index growth rate has held steady on the threshold that indicates that steel industry activity growth could continue to decrease in the near term. The copper leading index increased 1.5% in November. Five of its six indicators posted gains, but the surge in the inflation-adjusted new orders for nonferrous metal products made the largest contribution. An uptick in the stock price index for building products companies and a slightly longer average workweek also lifted the copper leading index. The positive copper leading index growth rate would normally indicate that industry activity could increase; however, high global copper inventories are continuing to suppress the U.S. copper industry.

The **metals price leading index** edged up 0.1% to 107.0 in November, the latest month for which it is available, from 106.9 in October. Its 6-month smoothed growth rate rose to 0.1% from a revised -0.2% in October. The growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed 0.5 percentage points to the net increase in the leading index. A slight rise in the Organization for Economic Cooperation and Development (OECD) Total Leading Index contributed 0.1 percentage point. In contrast, dips in the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar and the yield spread between the U.S. 10-year Treasury Note and the federal funds rate held the leading index from moving higher in November. The metals price leading index signals major changes in the growth rate of nonferrous metal prices an average of 8 months in advance.

The growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories, which is an indicator of supply and usually moves inversely with the price of metals, increased in November. Inventory levels are near a 4-year high. These high inventories and the barely positive metals price leading index growth rate suggest that some metal prices could decline further in the near further.

The percent changes from October to November for the **metal industry coincident indexes**, which measure current economic activity, are shown below. November is the latest month for which these indexes are available.

Primary Metals	1.7%
Steel	0.9%
Copper	0.0%

Tables 1, 3, 5, and 7 identify the indicators and, for the industry indexes, show the contributions of each indicator to its respective index.

The *Metal Industry Indicators* report is produced at the U.S. Geological Survey. For more information about these indexes and the *Metal Industry Indicators* monthly report, contact Gail James (703-648-4915), (e-mail, gjames@usgs.gov) at the U.S. Geological Survey.

The *Metal Industry Indicators* summary report with indexes for December and January is scheduled for release on the World Wide Web at 10:00 a.m. EST, Friday, February 15, 2013.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

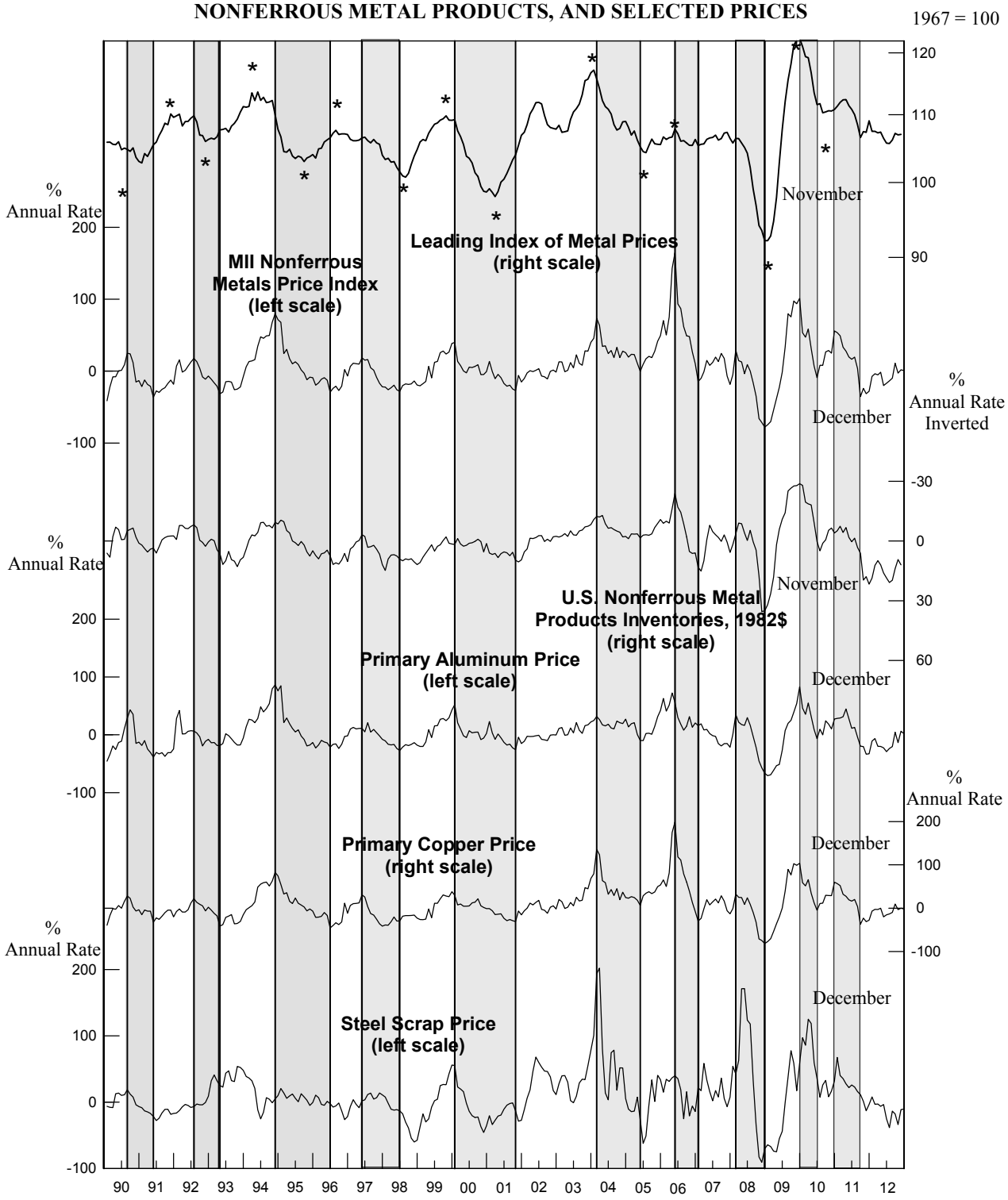
		Six-Month Smoothed Growth Rates				
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982$)	Primary Aluminum	Primary Copper	Steel Scrap
2011						
November	107.3	-31.4	17.9	-33.6	-31.1	-12.9
December	109.1r	-28.1	21.6	-32.9	-27.4	-3.3
2012						
January	107.5	-7.4	18.6	-11.1	-6.8	7.8
February	107.5	-3.7	12.3	-6.5	-2.7	-3.1
March	107.2	-5.3	9.8	-20.0	-2.7	-3.0
April	107.3	-1.6	11.9	-20.3	0.0	-6.4
May	106.4	-20.3	16.1	-22.5	-19.6	-3.6
June	105.7	-17.0	18.5	-29.1	-15.3	-25.1
July	105.6r	-13.6	20.8r	-23.5	-13.0	-38.6
August	106.2	-9.9	19.6	-20.5	-9.5	-13.5
September	107.1	11.0	13.8	4.2	9.7	-17.9
October	106.9	-2.8	9.2r	-13.7	-3.2	-34.0
November	107.0	1.8	11.9	6.1	0.0	-11.2
December	NA	0.7	NA	1.7	-1.9	-10.4

NA: Not available **r:** Revised

Note: The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metal products, the Organization for Economic Cooperation and Development (OECD) Total Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metal products (NAICS 3313, 3314, & 335929). Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); U.S. Census Bureau; the Organization for Economic Cooperation and Development (OECD); and Federal Reserve Board.

CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF NONFERROUS METAL PRODUCTS, AND SELECTED PRICES



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

U.S. Geological Survey, January 2013

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2011				
December	162.2	3.7	114.2	15.2
2012				
January	162.6	3.6	113.3	11.6
February	163.3	3.9	113.5	10.0
March	162.4	2.3	112.6	6.7
April	161.8	1.3	113.8	7.5
May	160.0	-1.0	113.6	5.8
June	156.7	-4.9	113.3	4.2
July	156.2	-5.2	113.9	4.2
August	156.6r	-4.3r	113.9r	3.1r
September	158.5	-1.8	112.6	0.1
October	158.6r	-1.7r	112.3r	-1.1r
November	159.5r	-0.6r	114.2	1.7
December	158.6	-1.5	NA	NA

NA: Not available **r:** Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**November**	**December**
1. Average weekly hours, primary metals (NAICS 331)	0.1r	-2.0
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994 = 100)	0.2r	0.5
3. Ratio of price to unit labor cost (NAICS 331)	0.1	NA
4. USGS metals price index growth rate	-0.2r	0.6
5. New orders, primary metal products, (NAICS 331 & 335929) 1982$	0.2	NA
6. Index of new private housing units authorized by permit	0.2	NA
7. Growth rate of U.S. M2 money supply, 2005$	0.2	NA
8. PMI	-0.3r	0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.5r	-0.6

Coincident Index	**October**	**November**
1. Industrial production index, primary metals (NAICS 331)	-0.2r	0.7
2. Total employee hours, primary metals (NAICS 331)	-0.2r	0.0
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982$	0.0r	0.9
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.4r	1.7

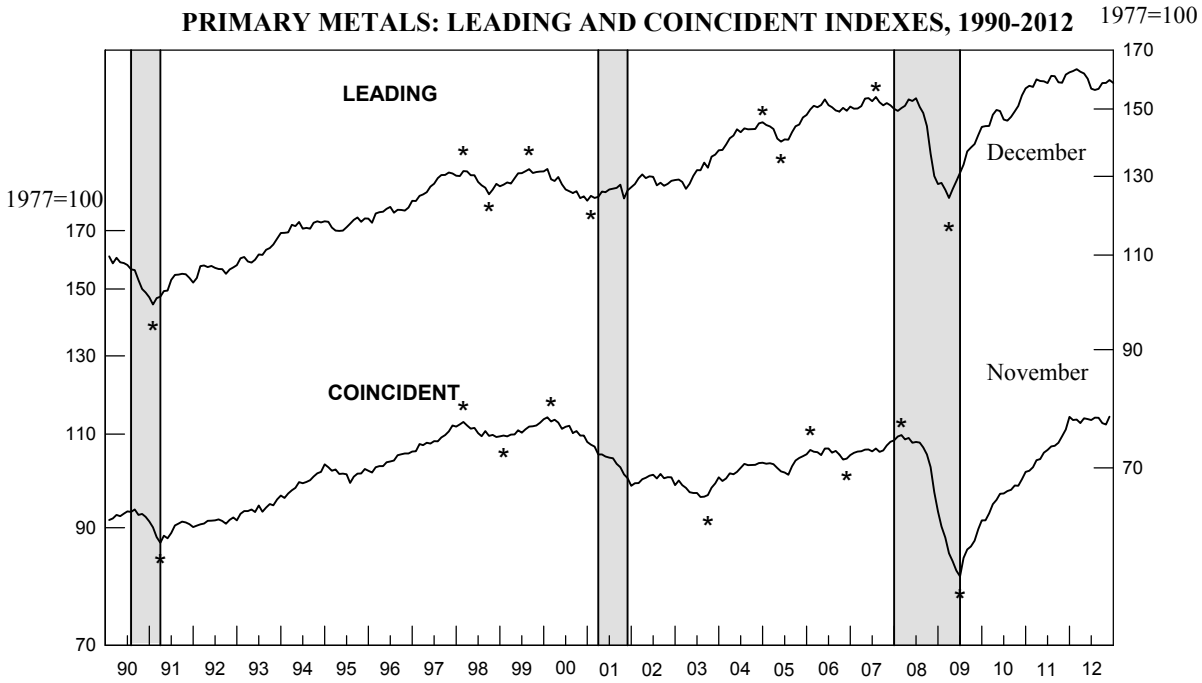
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available **r:** Revised

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

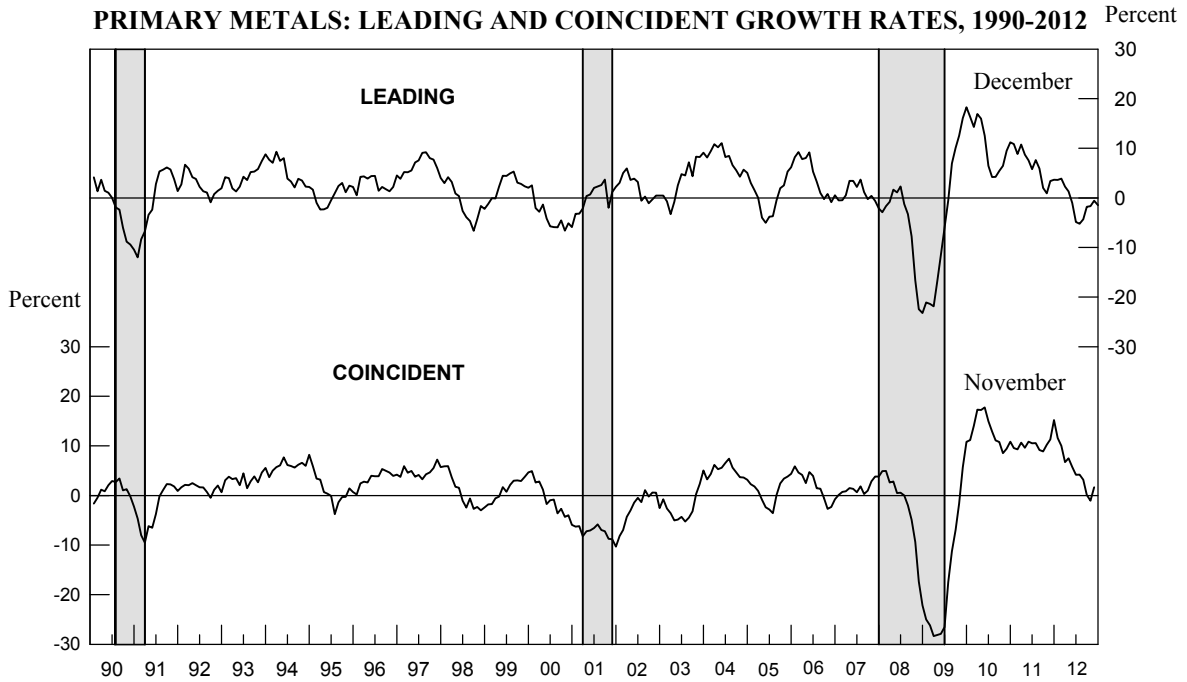
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1990-2012



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1990-2012



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2011				
December	112.0	3.0	117.5	9.7
2012				
January	112.2	3.0	117.0	7.8
February	111.5	1.5	117.4	7.4
March	111.6	1.4	116.4	4.5
April	111.5	1.1	117.3	5.2r
May	110.7	-0.5	117.6	4.6
June	108.9	-3.5	116.5	2.0
July	108.5r	-4.3	116.6	1.5
August	107.9	-4.8	117.3	2.1
September	109.8	-1.4	115.8	-0.9
October	109.9	-1.0	116.1r	-0.8r
November	109.9	-1.0	117.1	0.6

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

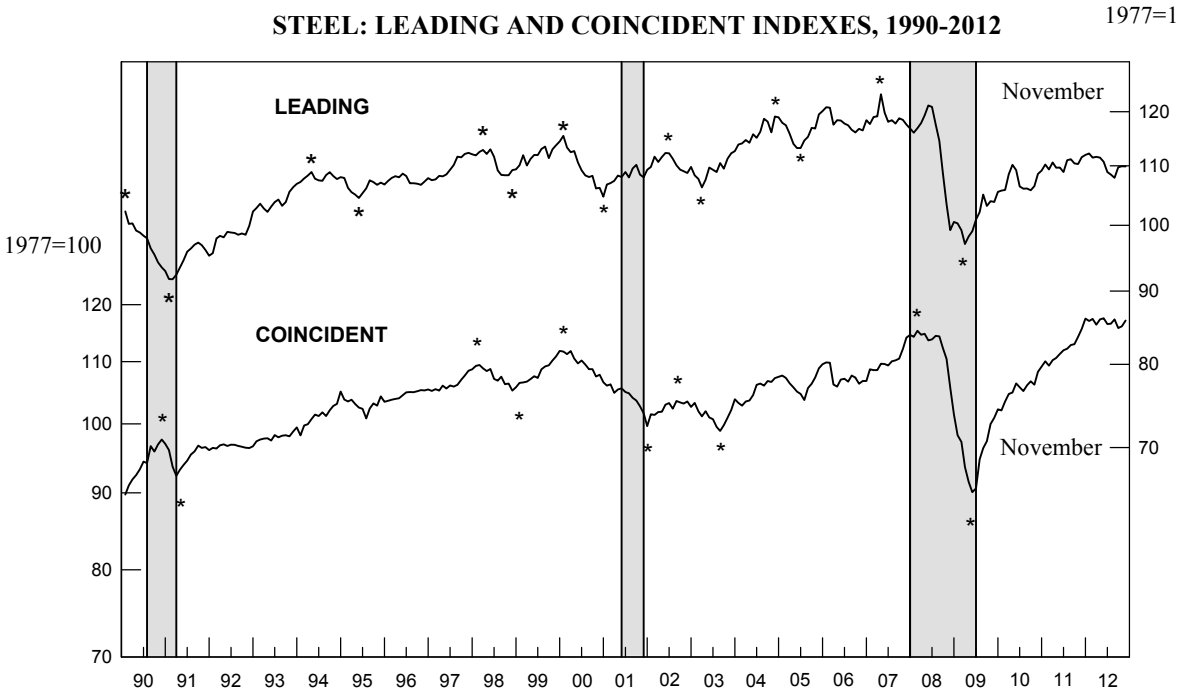
Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**October**	**November**
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	-0.6	0.1
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982$	0.4	-0.1
3. Shipments of household appliances, 1982$	0.0	0.1
4. S&P stock price index, steel companies	0.0	-0.2
5. Retail sales of U.S. passenger cars and light trucks (units)	-0.2r	0.3
6. Growth rate of the price of steel scrap (#1 heavy melting, $/ton)	0.2	-0.3
7. Index of new private housing units authorized by permit	-0.1	0.2
8. Growth rate of U.S. M2 money supply, 2005$	0.4	0.2
9. PMI	0.0	-0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.1r	0.0
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	0.2r	0.8
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982$	0.5r	0.0
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	-0.5	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.3r	0.9

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, U.S. Bureau of Economic Analysis and American Automobile Manufacturers Association; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

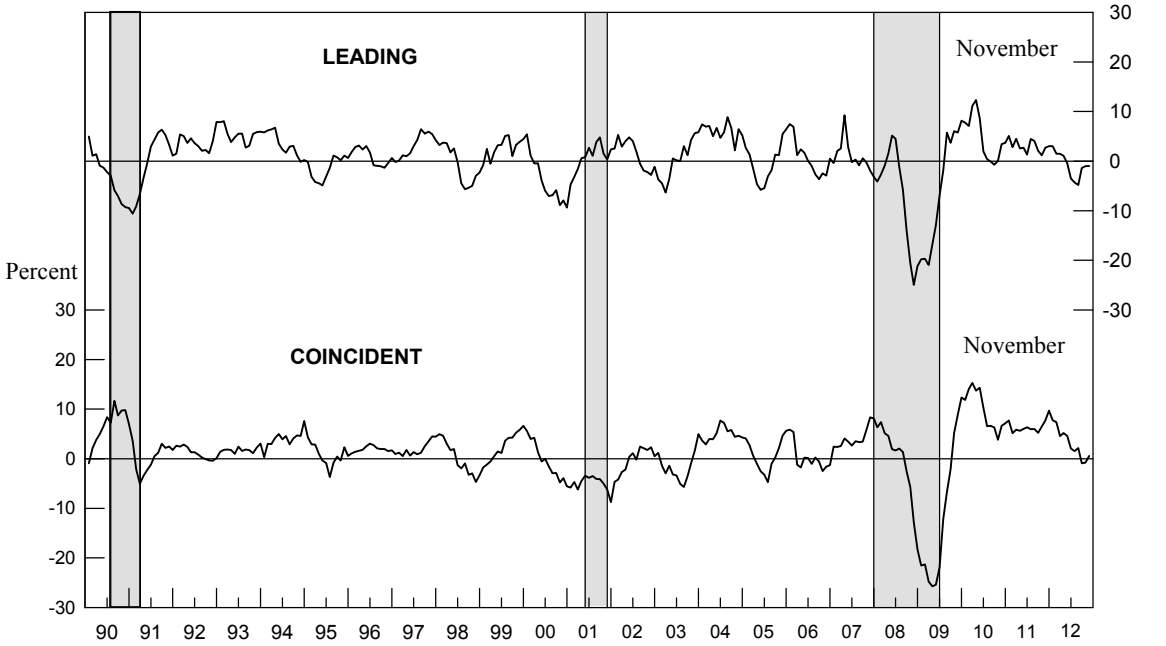
r: Revised

CHART 4.
STEEL: LEADING AND COINCIDENT INDEXES, 1990-2012



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1990-2012



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, January 2013

Table 6.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2011				
December	120.7	0.9	108.5	5.4
2012				
January	123.1	4.8	109.1	5.4
February	123.3	4.7	109.1	4.1
March	123.6	4.9	106.7	-0.9
April	124.5	5.9	109.1	2.7
May	121.5	1.0	105.8	-3.6
June	122.7	2.9r	106.6	-2.3
July	124.3	5.2	110.4	3.9
August	123.3	3.1	108.1	-0.5
September	125.2	5.5	106.7	-2.7
October	124.2r	2.6r	106.3r	-3.2r
November	126.1	4.8	106.3	-2.8

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

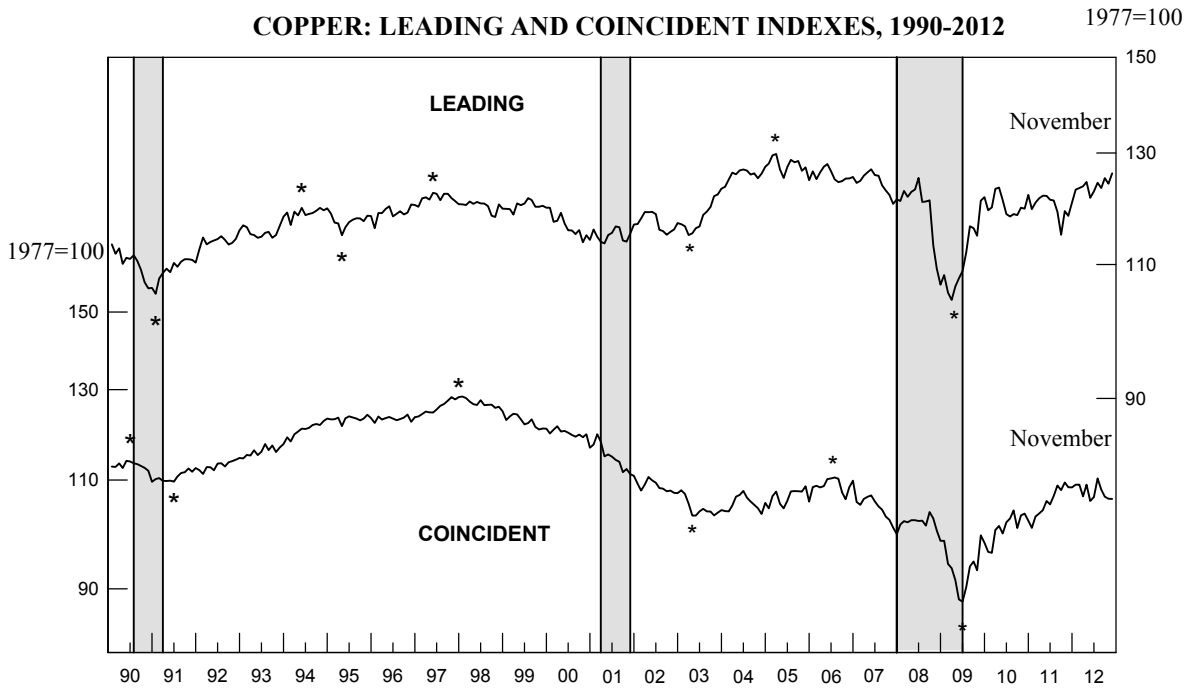
Table 7.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**October**	**November**
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	-0.2	0.4
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982$	-0.2	0.5
3. S&P stock price index, building products companies	0.0	0.4
4. LME spot price of primary copper	-0.3	0.1
5. Index of new private housing units authorized by permit	-0.2	0.2
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.0	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.9	1.5
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.1r	-0.1
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	-0.6	0.0
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.4r	0.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 4, and 6 of the leading index.

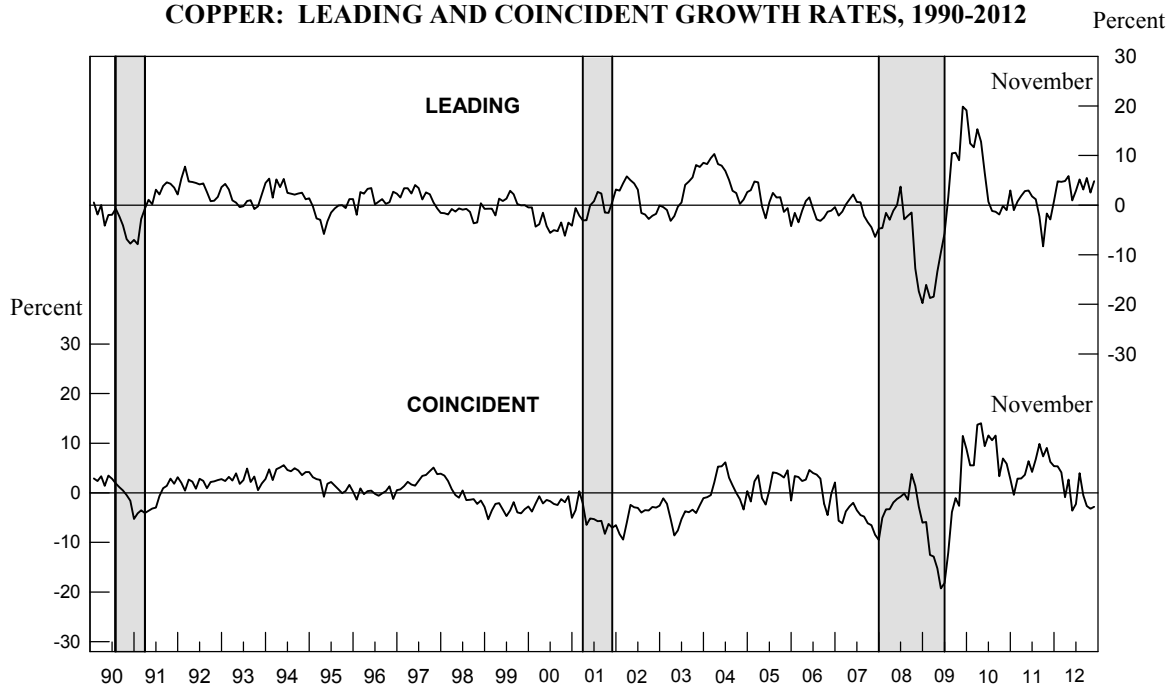
r: Revised NA: Not available

CHART 6.
COPPER: LEADING AND COINCIDENT INDEXES, 1990-2012



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1990-2012

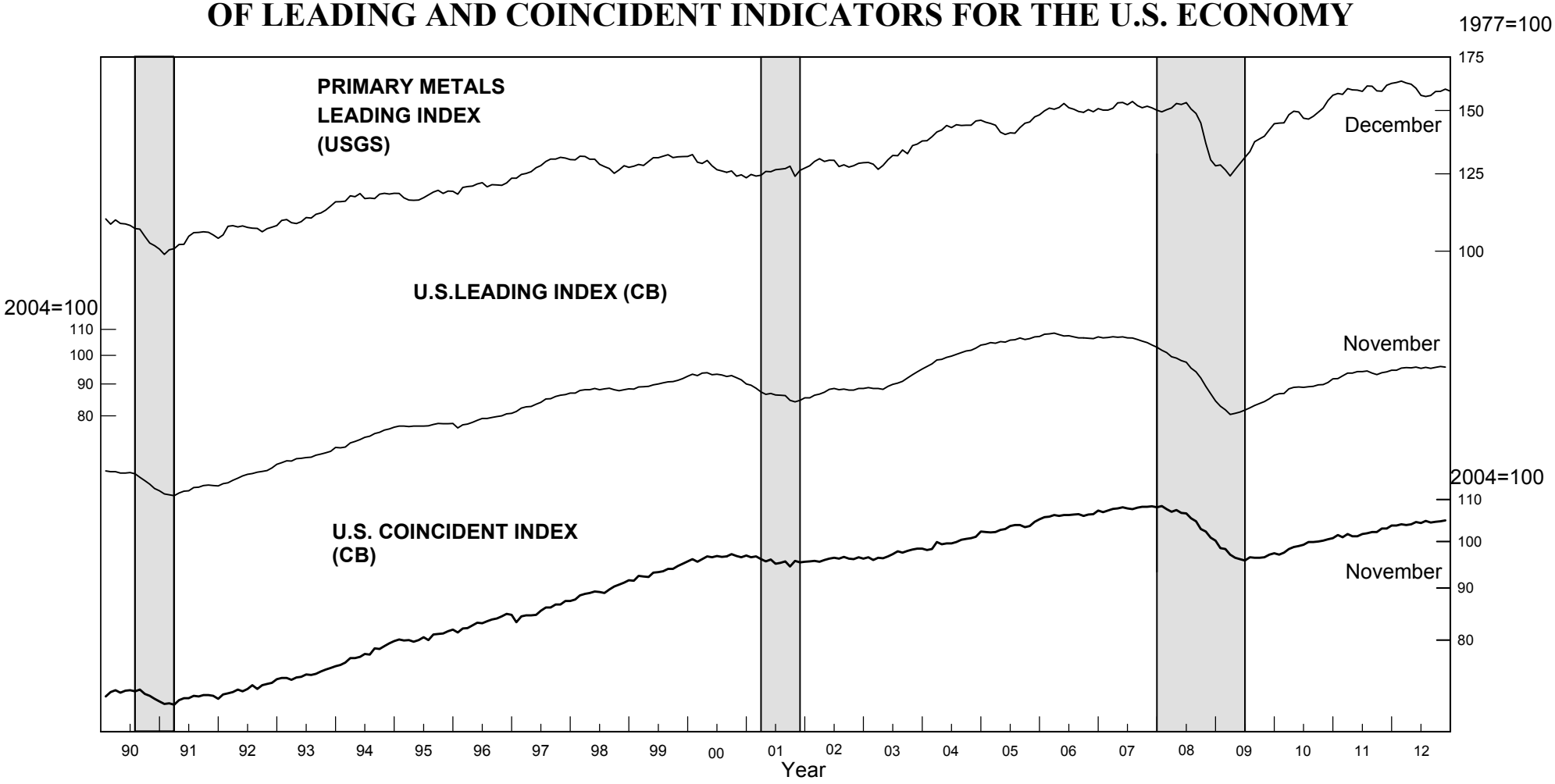


Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Chart 8.

PRIMARY METALS LEADING INDEX AND COMPOSITE INDEXES OF LEADING AND COINCIDENT INDICATORS FOR THE U.S. ECONOMY



Shaded areas are business cycle recessions.

Sources: U.S. Geological Survey (USGS) and Conference Board (CB).

January 2013